

WTE27X-3P1861S01

W27

COMPACT PHOTOELECTRIC SENSORS





Ordering information

Туре	Part no.
WTE27X-3P1861S01	1129917

Other models and accessories → www.sick.com/W27

Illustration may differ



Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Energetic
Dimensions (W x H x D)	31.4 mm x 112.3 mm x 70.4 mm
Housing design (light emission)	Rectangular
Sensing range max.	10 mm 300 mm ¹⁾
Type of light	Visible red light
Light source	PinPoint LED ²⁾
Light spot size (distance)	Ø 15 mm (400 mm)
Adjustment	Potentiometer
Special applications	Explosive areas

 $^{^{1)}}$ Object with 90% remission (based on standard white, DIN 5033).

 $^{^{2)}}$ Average service life: 100,000 h at $\rm T_U$ = +25 $^{\circ}\rm C.$

Mechanics/electronics

Supply voltage U _B 10 V DC 30 V DC. ¹¹ Ripple < 5 V _{pp} ²¹ Current consumption 35 mA ³¹ Switching output PNP Output function Complementary Switching mode Light/dark switching Signal voltage PNP HIGH/LOW Approx. V _S − 2.5 V / 0 V Output current I _{max.} ≤ 100 mA Response time ≤ 1.5 ms ²¹ Switching frequency 350 Hz ²¹ Switching frequency 350 Hz ²¹ Connection type Cable, 4-wire, 10 m ²¹ Cable material Plastic, PVC Circuit protection A ²¹ B ²¹ C ²¹ Protection class II ²¹¹0⟩ Weight 750 g Housing material Metal, plastic, Stainless steel V2A (1.4301), ABS Optics material Plastic, PMMA Enclosure rating IP64 Certificate (CCC) STIRIAS 2023322315005303 Certificate (IECEx) Exec nC op is IIB T4 Gc, Ex op is to IIIB T135 °C Dc ATEX II 30 Ex to IIIB T135 °C Dc X in accordance with directive 2014/34 / EU ATEX II 30 Ex to		
Current consumption 35 mA 31 Switching output PNP Output function Complementary Switching mode Light/dark switching Signal voltage PNP HIGH/LOW Approx. Vs = 2.5 V / 0 V Output current I _{max} \$ 100 mA Response time \$ 1.5 ms 40 Switching frequency 350 Hz 20 Connection type Cable, 4-wire, 10 m 50 Cable material Plastic, PVC Circuit protection A 70 B 50 C 90 Protection class II 100 Weight 750 g Housing material Metal, plastic, Stainless steel V2A (1.4301), ABS Optics material Plastic, PMMA Enclosure rating IP64 Certificate (CCC) SITIIAS 2023322315005303 Certificate (IECEX) Ex ec nC op is IIB T4 Gc, Ex op is to IIIB T135°C Dc ATEX marking ATEX II 3D Ex to IIIB T135°C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G Ambient operating temperature -20 °C +50 °C	Supply voltage U _B	10 V DC 30 V DC ¹⁾
Switching output PNP Output function Complementary Switching mode Light/dark switching Signal voltage PNP HIGH/LOW Approx. V _S − 2.5 V / 0 V Output current I _{max.} ≤ 100 mA Response time ≤ 1.5 ms ⁴⁾ Switching frequency 350 Hz ⁵⁾ Connection type Cable, 4-wire, 10 m ⁶⁾ Cable material Plastic, PVC Circuit protection A ⁷⁾ B ⁸⁾ C ⁹⁾ Protection class III ¹⁰⁾ Weight 750 g Housing material Metal, plastic, Stainless steel V2A (1.4301), ABS Optics material Plastic, PMMA Enclosure rating IP64 Certificate (ICCC) SiTiiAS 2023322315005303 Certificate (IECEx) Ex en (Cop is iil Bit 14 Ge, Ex op is te IIIB T135°C De ATEX marking ATEX II 3G Ex nA op is IIB T4 Ge X ATEX II 3D Ex to IIIB T135°C De X In accordance with directive 2014/34 / EU Ex area category 3D, 3G Ambient operating temperature -20 °C +50 °C	Ripple	< 5 V _{pp} ²⁾
Output function Switching mode Light/dark switching Signal voltage PNP HIGH/LOW Approx. V _S - 2.5 V / 0 V Output current I _{max} . \$\leq 100 \text{ mA}\$ Response time \$\leq 1.5 \text{ ms}^4\rightarrow Switching frequency \$350 \text{ Hz}^5\rightarrow Connection type Cable, 4-wire, 10 m 6) Cable material Plastic, PVC Circuit protection A ⁷⁾ B ⁸⁾ C ⁹⁾ Protection class 10) Weight 750 g Housing material Metal, plastic, Stainless steel V2A (1.4301), ABS Optics material Plastic, PMMA Enclosure rating 1964 Certificate (CCC) SiTiiAS 2023322315005303 Certificate (IECEx) Ex en C op is IIB T4 Gc, Ex op is to IIB T135 °C Dc ATEX II 30 Ex to IIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category Ambient operating temperature -20 °C +50 °C	Current consumption	35 mA ³⁾
Switching mode Light/dark switching Approx. V _S - 2.5 V / 0 V Output current I _{max.} \$ 100 mA Response time \$ \$ 1.5 ms 4) Switching frequency \$ 350 Hz 5) Connection type Cable, 4-wire, 10 m 6) Cable material Plastic, PVC Circuit protection A 7) B 8) C 9) Protection class Weight 750 g Housing material Metal, plastic, Stainless steel V2A (1.4301), ABS Optics material Plestic, PMMA Enclosure rating P64 Certificate (CCC) SiTiiAS 2023322315005303 Certificate (IECEx) Ex ex n C op is IIB T4 Gc, Ex op is to IIIB T135 °C Dc ATEX marking ATEX marking ATEX in accordance with directive 2014/34 / EU Ex area category Ambient operating temperature -20 °C +50 °C	Switching output	PNP
Signal voltage PNP HIGH/LOW	Output function	Complementary
Output current I _{max} . ≤ 1.5 ms ⁴⁾ Switching frequency 350 Hz ⁵⁾ Connection type Cable, 4-wire, 10 m ⁶⁾ Cable material Plastic, PVC Circuit protection A ⁷⁾ B ⁸⁾ C ⁹⁾ Protection class III ¹⁰⁾ Weight 750 g Housing material Metal, plastic, Stainless steel V2A (1.4301), ABS Optics material Plastic, PMMA Enclosure rating IP64 Certificate (CCC) SiTiliAS 2023322315005303 Certificate (IECEx) IECEX TUR 20.0064X Ex marking (IECEx) Ex en C op is IIB T4 Gc, Ex op is to IIIB T135 °C Dc ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex to IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G Ambient operating temperature -20 °C +50 °C	Switching mode	Light/dark switching
Response time ≤ 1.5 ms ⁴⁾ Switching frequency 350 Hz ⁵⁾ Connection type Cable, 4-wire, 10 m ⁶⁾ Cable material Plastic, PVC Circuit protection A ⁷⁾ B ⁸⁾ C ⁹⁾ Protection class II ¹⁰⁾ Weight 750 g Housing material Metal, plastic, Stainless steel V2A (1.4301), ABS Optics material Plastic, PMMA Enclosure rating IP64 Certificate (CCC) SITIAS 2023322315005303 Certificate (IECEx) IECEX TUR 20.0064X Ex marking (IECEx) Ex ec nC op is IIB T4 Gc, Ex op is to IIIB T135 °C Dc ATEX marking ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex to IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G Ambient operating temperature -20 °C +50 °C	Signal voltage PNP HIGH/LOW	Approx. V _S – 2.5 V / 0 V
Switching frequency 350 Hz 5) Connection type Cable, 4-wire, 10 m 6) Cable material Plastic, PVC Circuit protection A 7)	Output current I _{max.}	≤ 100 mA
Connection type Cable, 4-wire, 10 m 6) Cable material Plastic, PVC Circuit protection A 7) B 8) C 9) Protection class III 10) Weight 750 g Housing material Metal, plastic, Stainless steel V2A (1.4301), ABS Optics material Plastic, PMMA Enclosure rating IP64 Certificate (CCC) SiTiiAS 2023322315005303 Certificate (IECEx) Ex marking (IECEx) Ex ec nC op is IIB T4 Gc, Ex op is to IIIB T135 °C Dc ATEX marking ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex to IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category Ambient operating temperature -20 °C +50 °C	Response time	\leq 1.5 ms $^{4)}$
Cable material Circuit protection A 7) B 8) C 9) Protection class II 10) Weight T50 g Housing material Optics material Plastic, PMMA Enclosure rating Certificate (CCC) SiTiiAS 2023322315005303 Certificate (IECEx) EXECTIVE 20.0064X Ex marking (IECEx) ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex tc IIIB T135°C Dc X In accordance with directive 2014/34 / EU Ex area category Ambient operating temperature Plastic, PVC Atin Accordance with directive 2014/34 / EU Atin Accordance with directive 2014/34 / EU Atin Accordance with directive 2014/34 / EU -20°C +50°C	Switching frequency	350 Hz ⁵⁾
Circuit protection A 7 B 8 B C C 9 C 9 C 9 C 9 C 9 C 9 C 9 C 9 C 9	Connection type	Cable, 4-wire, 10 m ⁶⁾
B 8) C 9) Protection class II 10) Weight 750 g Housing material Metal, plastic, Stainless steel V2A (1.4301), ABS Optics material Plastic, PMMA Enclosure rating IP64 Certificate (CCC) SiTiiAS 2023322315005303 Certificate (IECEx) IECEx TUR 20.0064X Ex marking (IECEx) Ex ec nC op is IIB T4 Gc, Ex op is tc IIIB T135 °C Dc ATEX marking ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex tc IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G Ambient operating temperature -20 °C +50 °C	Cable material	Plastic, PVC
Weight 750 g Housing material Metal, plastic, Stainless steel V2A (1.4301), ABS Optics material Plastic, PMMA Enclosure rating IP64 Certificate (CCC) SiTiiAS 2023322315005303 Certificate (IECEx) IECEX TUR 20.0064X Ex marking (IECEx) Ex ec nC op is IIB T4 Gc, Ex op is tc IIIB T135°C Dc ATEX marking ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex tc IIIB T135°C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G Ambient operating temperature -20 °C +50 °C	Circuit protection	B ⁸⁾
Housing material Metal, plastic, Stainless steel V2A (1.4301), ABS Plastic, PMMA Plastic, PMMA IP64 Certificate (CCC) SiTiiAS 2023322315005303 Certificate (IECEx) IECEX TUR 20.0064X Ex marking (IECEx) Ex ec nC op is IIB T4 Gc, Ex op is to IIIB T135 °C Dc ATEX marking ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex to IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G Ambient operating temperature Metal, plastic, Stainless steel V2A (1.4301), ABS Plastic, PMMA IP64 STIIAS 2023322315005303 EX et nIIB T135 °C Dc ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex to IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category Ambient operating temperature	Protection class	II ¹⁰⁾
Optics material Enclosure rating IP64 Certificate (CCC) SiTiiAS 2023322315005303 Certificate (IECEx) IECEX TUR 20.0064X Ex marking (IECEx) Ex ec nC op is IIB T4 Gc, Ex op is tc IIIB T135 °C Dc ATEX marking ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex tc IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G Ambient operating temperature Plastic, PMMA IP64 SiTiiAS 2023322315005303 IECEX TUR 20.0064X Ex ec nC op is IIB T4 Gc, Ex op is tc IIIB T135 °C Dc ATEX II 3D Ex tc IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G	Weight	750 g
Enclosure rating Certificate (CCC) SiTiiAS 2023322315005303 Certificate (IECEx) IECEX TUR 20.0064X Ex marking (IECEx) Ex ec nC op is IIB T4 Gc, Ex op is tc IIIB T135°C Dc ATEX marking ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex tc IIIB T135°C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G Ambient operating temperature -20 °C +50 °C	Housing material	Metal, plastic, Stainless steel V2A (1.4301), ABS
Certificate (CCC) SiTiiAS 2023322315005303 Certificate (IECEx) IECEX TUR 20.0064X Ex marking (IECEx) Ex ec nC op is IIB T4 Gc, Ex op is tc IIIB T135 °C Dc ATEX marking ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex tc IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G Ambient operating temperature -20 °C +50 °C	Optics material	Plastic, PMMA
Certificate (IECEx) Ex marking (IECEx) Ex ec nC op is IIB T4 Gc, Ex op is tc IIIB T135°C Dc ATEX marking ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex tc IIIB T135°C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G Ambient operating temperature -20 °C +50 °C	Enclosure rating	IP64
Ex marking (IECEx) Ex ec nC op is IIB T4 Gc, Ex op is tc IIIB T135 °C Dc ATEX marking ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex tc IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G Ambient operating temperature -20 °C +50 °C	Certificate (CCC)	SiTiiAS 2023322315005303
ATEX marking ATEX II 3G Ex nA op is IIB T4 Gc X ATEX II 3D Ex tc IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G Ambient operating temperature -20 °C +50 °C	Certificate (IECEx)	IECEx TUR 20.0064X
ATEX II 3D Ex to IIIB T135 °C Dc X In accordance with directive 2014/34 / EU Ex area category 3D, 3G Ambient operating temperature -20 °C +50 °C	Ex marking (IECEx)	Ex ec nC op is IIB T4 Gc, Ex op is tc IIIB T135°C Dc
Ambient operating temperature -20 °C +50 °C	ATEX marking	ATEX II 3D Ex to IIIB T135°C Dc X
, , ,	Ex area category	3D, 3G
Ambient temperature, storage -40 °C +75 °C	Ambient operating temperature	
	Ambient temperature, storage	-40 °C +75 °C

 $^{^{1)}\,\}mathrm{Limit}$ values when operated in short-circuit protected network: max. 8 A.

Classifications

ECLASS 5.0	27270903
ECLASS 5.1.4	27270903
ECLASS 6.0	27270903

 $^{^{2)}}$ May not fall below or exceed UV tolerances.

³⁾ Without load.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ Do not bend below 0 °C.

 $^{^{7)}}$ A = V_S connections reverse-polarity protected.

 $^{^{8)}}$ B = inputs and output reverse-polarity protected.

 $^{^{9)}}$ C = interference suppression.

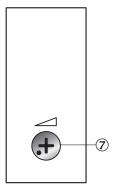
¹⁰⁾ Reference voltage: 50 V DC.

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COMPACT PHOTOELECTRIC SENSORS

27270903
21210903
27270903
27270903
27270903
27270903
27270904
27270904
27270903
EC001821
EC001821
EC002719
EC002719
39121528

Adjustments



⑦ Sensing range adjustment: potentiometer

Connection type



Connection diagram

Cd-094



Sensing range diagram

WTE27-3 EX



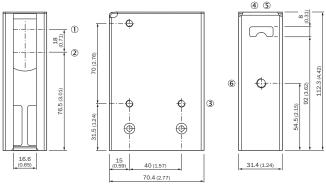
0 50 100 150 200 250 300 350 400 (1.97) (3.94) (5.91) (7.87) (9.84) (11.81)(13.78)(15.74)

Distance in mm (inch)

Sensing range

- ① Sensing range on black, 6 % remission
- $\ensuremath{\text{@}}$ Sensing range on gray, 18 % remission
- $\ensuremath{\mathfrak{B}}$ Sensing range on white, 90 % remission
- ① Sensing range on black, 6% remission factor
- ③ Sensing range on white, 90% remission factor

Dimensional drawing (Dimensions in mm (inch))



- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- 3 Mounting hole ø 5.2 mm
- 4 LED indicator green: Supply voltage active
- (5) LED indicator yellow: Status of received light beam
- Sensing range adjustment: potentiometer

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COMPACT PHOTOELECTRIC SENSORS

Recommended accessories

Other models and accessories → www.sick.com/W27

	Brief description	Туре	Part no.
Others			
	 Connection type head A: Male connector, M12, 4-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² 	STE-1204-G	6009932

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

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